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A FOSSIL FOREST IN JACKSON COUNTY.

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Read before the Academy, at Topeka, December 30, 1904.

DURING the month of June, 1900, while making a study of the geology of the northwestern part of Jackson county, I was asked to visit a well which was being dug on the Channel farm about two miles south of America City. The workmen had discovered a layer of some twenty inches of a soft, white stone which they were unable to name. This proved to be a very good grade of massive gypsum.

While at this place one of the workmen brought me a large fragment of petrified wood. He informed me that it came from the Laban Brenner farm, about one mile southeast of America City, and that great quantities of this material had been found here and carried away by any who cared for it.

He also said that stumps could be found at this place projecting above the surface of the earth, giving the appearance of a recently cleared field. I later found this last statement to be somewhat overdrawn. However, it so far aroused my interest as to cause me to visit Mr. Brenner at once. I found in his yard numerous fragments of petrified trees, and one large stump which he had used for a number of years as a stile-block. It was about two and one-half feet in height by one and one-half feet in diameter at the base, and at a distance might easily be taken for an old, partially decayed stump of the present time which had been dug up by the roots, as these extended on each side some two feet. Mr. Brenner told me that there had formerly been many of these on his place, but only one was now left, and this only because it was too large to be easily handled, and was surrounded by about eight inches of limestone, and is illustrated in plate XII.

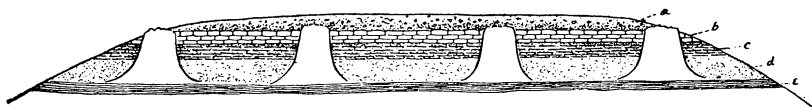


FIG. 9. Diagram showing location of stumps in the fossil forest in Jackson county. (a) Soil and gravel; (b) limestone; (c) shaly limestone; (d) soil and clay; (e) shale.

I found this fossil located on the south bank of Wolf creek, on top of a high knoll, probably the highest point in the county, as it easily overtops the high ground along the western edge known as English Ridge. On examining the locality, I found that all the stumps removed had come from just beneath this layer of limestone (fig. 9, b),

which outcropped around the rim of the knoll. I also found many fragments of petrified wood below this level which had evidently weathered out of this same stratum. A close search along this outcrop revealed two other fair-sized stumps within fifty yards of the former one; their tops were just level with the surface of the ground.

Permission having been obtained from Mr. Brenner to remove these, as well as any others which I might find, I again visited this place in November of the same year, with my geology class. A further search brought to light two more fine specimens of stumps. These, with the three formerly discovered, were sufficient to constitute a heavy load for transportation to Holton, and as our time was limited we were compelled to give up further search.

The work of excavating was comparatively easy, as the limestone had been very much fractured. Below this was about eight inches of a soft, shaly limestone mingled with clay (figure 9, *c*). This rested on ten inches of dark brown soil and clay (figure 9, *d*), in which the roots of the stumps were embedded as they grew. A careful search in this soil failed to reveal any of the leaves or fruit of these trees.

The stumps were, with one exception, found as they grew, their larger roots still unbroken. All the wood at this place appears to have partly decayed before petrification took place, no remnant of bark remaining. This would indicate that the trees were partially or wholly submerged, as logs and stumps of the present time decay in much the same manner when exposed in the water.

I am indebted to Mr. E. H. Sellards for the identification of these trees. He has found them to belong to the ancient group of plants, linking the conifers with the cycads, known as Cordaites. The strata belong to the Upper Carboniferous, Wabaunsee formation.

The stumps found vary in diameter from eight inches to two feet, and, as our examination of this locality was only superficial and very hasty, I feel sure that extended search would reveal many others, possibly some larger, though two feet is the maximum size, so far as I know, yet reported for Cordaites.

The present extent of these trees, which I have made bold to designate as a fossil forest, is limited to the top of this single knoll, an area of perhaps ten acres. However, it must in times past have been very much more extensive, as evidence of their existence in the form of loose fragments and occasionally stumps and logs have been found in both Jackson and Pottawatomie counties, even extending southward across the Kaw to seven miles west of Alma, in Wabaunsee county.

The most important points in this discovery may be briefly noted in the following:

SUMMARY.

1. The stumps are found in place as they grew.
2. They are probably the last remnant of what was formerly a forest of considerable extent.
3. The soil upon which these trees grew can still be found much the same to-day as when they flourished.
4. The trees represent the highest type of plants to be found on the earth at that time.